REMARKS

All the claims examined on the merits in this application have been rejected on formal and/or substantive grounds. Applicants have amended their claims and respectfully submit that all the claims currently in this application are patentable over the rejection of record.

Applicants discuss the grounds of rejection in the order in which these grounds are presented in the outstanding Official Action. A substantive grounds of rejection is presented first and is directed to all the claims examined on the merits in this application, Claims 1, 2, 4-16, 25 and 26. These claims stand rejected, under 35 U.S.C. §102(a), (b) and/or (e), as being anticipated by U.S. Patent 6,218,418 to Pervarallo et al.; U.S. Patent 6,020,498 to Ferruccio et al.; U.S. Patent 6,118,008 to Malle et al.; U.S. Patent 5,464,860 to Lepage et al.; Daidone et al. I (CA 105:39289); Daidone et al. II (CA 125:195490); Daidone et al. III (CA 104:17558); Sato (CA 127:358859); U.S. Patent 4,515,625 to Burow, Jr.; or U.S. Patent 4,505,739 to Seki et al.

It is unnecessary to separately discuss each of the ten applied references. Suffice it to say, each one of them discloses a generic compound wherein the compound of Claim 1 of the present application, having the structural formula 1, is characterized by R^3 being $-C(=O)(CR^{10}R^{11})_n-$ and R^4 being $(C_6\text{-}C_{14})$aryl optionally substituted with from 1 to 3 substituents.

To overcome any anticipation provided by any of the compounds set forth in the ten applied references, applicants have amended Claim 1 to delete the meaning n is 0. As such, all of these disclosures, which encompass a substituted pyrazole ring bonded to an aminocarbonyl group, which, in turn, is bonded to a phenyl group, which may or may not be substituted, are outside the scope of the amended claims of the present application.

It is emphasized that compounds within the scope of Seki et al., which encompass alkaryl groups, e.g., Compounds Nos. 40 and 41, are outside the scope of the present application. This is so insofar as R^4, although encompassing (C_6-C_{14})aryl, does not encompass any alkaryl group.

Similarly, Pevarello et al. discloses a generic compound having the structural Formula (I) which includes a substituted pyrazole ring bonded to an aminocarbonyl group which is bonded to radical R_1. There are, however, no meanings of R_1 which encompass an alkaryl group. It is noted that R_1 in Pevarello et al. may be aryl or arylalkyl. However, the arylalkyl group constitutes bonding of the carbonyl group through a ring carbon of the aryl group, which is substituted with alkyl. This is far removed from an alkaryl group wherein the carbonyl group bonds to an alkyl group substituted on the aryl group.

The above discussion is emphasized insofar as the outstanding Official Action recites that the meaning n of 1 is anticipated by these two references. The above discussion emphasizes that this conclusion is in error.

It is emphasized that Claim 15 has been amended to be independent. By making Claim 15 independent it is unnecessary to delete species of generic formula I wherein n is defined by zero but which are not anticipated by the compounds of the aforementioned applied references.

The second substantive ground of rejection is directed to all the claims examined on the merits in this application, Claims 1, 2, 4-16, 25 and 26, as being unpatentable, under 35 U.S.C. §103(a), over the combined teaching of the same references applied in the anticipation rejection.

To sum up the basis for this rejection the Official Action avers that the applied references disclose compounds generically embraced by the structural formula of Claim 1 of the present application and employed in the same utility.

The remarks directed to the anticipation rejection establish that the amendment to the claims eliminates the predicate for imposition of this ground of rejection. That is, as amended, the claimed compounds do not embrace any of the specific applied compounds disclosed in the applied references. Stated differently, none of the claimed compounds are within any generic class of compounds disclosed in any of the applied references.

Although the above remarks establish that one of the two predicates for imposition of the rejection of Claims 1, 2, 4-16, 25 and 26, under 35 U.S.C. §103(a), has been eliminated, it is important to emphasize that the second basis for this rejection, the allegation that the references disclosed compounds have the same use as claimed compounds of the present application, is for the most part not the case.

The first cited reference, Pevarello et al., is directed to compounds used as antitumor agents. Ferruccio et al. is drawn to compounds useful in the preparation of photographic developing agents. Malle et al. discloses compounds employed as dyes. Lepage et al. is directed to compounds employed in the treatment of epilepsy. Daidone et al. I discloses a compound employed as an antifungal agent. Daidone et al. II is directed to agents active against dangerous bacterial agents. Daidone et al. III is also directed against disease-causing bacterial agents. Sato describes compounds employed as intermediates for photographic couplers, dyes and the generic term "pharmaceuticals." Burow Jr. is directed to compounds useful as selective herbicidal agents. Finally, Seki et al. is directed to compounds also useful as herbicides. Thus, only Pevarello et al. so much as discloses compounds having any similar

utility. This reference, however, as discussed above, discloses compounds whose structural formula is considerably removed from the generic formula of the claimed compound of the present application.

The claims of the present application have also been rejected on formal grounds. The first formal ground of rejection is directed to Claims 1, 4, 5 and 8-12. Claims 1, 4, 5 and 8-12 stand rejected, under 35 U.S.C. §112, first paragraph, as containing subject matter which is not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it most nearly connected, to make and/or use the invention.

The Official Action submits that no enablement is shown for the treatment of Alzheimer's disease. The Official Action explains this alleged lack of enablement by pointing out that the specification lacks any working examples exemplifying this treatment. Thus, the Official Action concludes that undue experimentation on the part of the reader will be necessary to determine which compound or compounds has utility against Alzheimer's disease. This allegation is made in spite of the Official Action concession that dosages and modes of administration of the claimed compounds are provided in the specification, albeit this disclosure is characterized as "speculative."

Applicants emphasize that the specification of an application need not include subject matter that is known in the field of the invention and is in the prior art. This is so insofar as patents are written for persons experienced in the field of the invention. To hold otherwise would require every patent document to include a technical treatise for the unskilled reader. S3 Inc. v. nVIDIA Corp., 259 F.3d 1364, 59 USPQ2d 1745 (Fed.Cir. 2001).

The Background of the Invention section of the specification indicates that serine/threonine kinase cdk5, along with its cofactor p25 or its longer cofactor p35, has been

linked to neurogenerative disorders and inhibitors of cdk5/p25, or cdk5/P35, are therefore useful in the treatment of neurogenerative diseases such as Alzheimer's disease. Treatment of Alzheimer's disease and other neurodegenerative disorders using cdk5 inhibitors is supported, in that section of the specification, by technical articles enumerated therein. Other technical articles set forth in that section of the specification support the proposition that serine/threonine kinase cdk2 is essential for normal cell cycling. These technical articles support the further proposition that inhibitors of cdk2 are useful in the treatment of various types of cancers and other diseases or conditions related to abnormal cell growth.

Other diseases for which treatment by inhibition of GSK-3 (glygocen synthesis kinase-3) is deemed appropriate, supported by specifically defined technical articles in respected technical journals, are also mentioned in the Background of the Invention portion of the specification. The claimed compound of the present application is an inhibitor of the enzyme GSK-3. As such, the utility of the compounds of the present application need not be provided in working examples. GSK-3 inhibitors are known to be effective in the treatment of the diseases recited in the specification and claims of the present application.

In view of these remarks, it is apparent that the rejection under 35 U.S.C. §112, first paragraph, predicated on nonenablement of the claimed invention, should be reconsidered and rescinded.

A second rejection made under 35 U.S.C. §112, first paragraph is directed to Claims 1, 4, 5 and 8-12. The Official Action predicates this ground of rejection on the ground that variables R^1 and R^4 of generic formula 1 are defective insofar as they are recited to be optionally substituted. The Official Action states that the rejected claims do not give any indication which substituents are for variables R^1 and R^4.

Applicants note that Claim 1 indicates that radical R^1 is optionally substituted with from 1 to 6 substituents defined as R^5. Similarly, the radical R^4 is substituted with 1 to 3 substituents defined as R^6. The meanings of R^5 and R^6 are clearly recited in Claim 1. As such, there is no basis for this ground of rejection. Claim 1 informs those skilled in the art of the meanings for substituents R^5 and R^6.

The dependent claims subject to this ground of rejection, Claims 4, 5 and 8 to 12, similarly do not contain any subject matter not described in the specification. All of these claims recite preferred and more preferred embodiments of radical R^1, set forth in Claim 1 from which all of these claims ultimately depend. In each case the preferred meanings of R^1 set forth in Claims 4, 5 and 8 to 12 is optionally substituted with one or more of the substituents set forth in Claim 1.

In view of these remarks it is apparent that there is no basis for rejection of the aforementioned claims under 35 U.S.C. §112, first paragraph. Reconsideration and removal of this ground of rejection is therefore deemed appropriate. Such action is respectfully urged.

The final ground of rejection is the formal rejection of Claims 1, 7, 15, 16 and 26. These claims stand rejected, under 35 U.S.C. §112, second paragraph, as being indefinite.

The basis for rejection of Claim 1 on this ground is the alleged absence of definition of variables R^5 and R^6. Applicants strongly traverse this ground of rejection. Radicals R^5 and R^6 are clearly set forth in Claim 1. Indeed, the same group of radicals that define R^5 also define R^6. Applicants are at a loss to understand what is indefinite about any of these meanings or the meaning of R^7, which is an additional meaning of R^5 and R^6.

It is emphasized that although R^5 and R^6 do not appear in generic formula 1 of Claim 1 they are defined as substituents of radicals R^1 and R^4, respectively, which are radicals of formula 1.

The second and penultimate indefinite ground of rejection is directed solely to Claim 7. Claim 7 is rejected, under 35 USC §112, second paragraph, as allegedly lacking antecedent basis because the substituents defined for R^1 are not found in Claim 1.

Applicants have considered this ground of rejection and respectfully submit that it cannot be sustained. This conclusion is reached when each of the substituents mentioned in Claim 7 is compared to the class of substituents of R^1 set forth in Claim 1, from which Claim 7 ultimately depends.

The first substituent meaning, $-NR^7C(=O)R^8$, of Claim 7 is specifically recited as one of the meanings of R^5, one of the optional substituents of R^1 in Claim 1. The second meaning of Claim 7, $(C_6\text{-}C_{14})$aryl, is also recited in Claim 1. This is so insofar as one of the meanings of R^5 is R^7. In turn, one of the meanings of R^7 is $(C_6\text{-}C_{14})$aryl. The third substituent recited in Claim 7 is (3-8 membered) heterocycloalkyl. That radical is one of the meanings of R^7. Similarly, the fourth and final substituent recited in Claim 7, (5-14 membered) heteroaryl, is recited in Claim 1 as the ultimate radical in the recitation of the meanings of R^7.

The third indefiniteness ground of rejection is directed to Claim 15. Claim 15 is directed to Markush group of compounds whose ultimate member is recited to be "pharmaceutical salts of the aforementioned compounds." The Official Action argues that the plural of salts creates indefiniteness predicated on the interpretation that the plural denotes includes mixtures.

Applicants do not believe that the recited term creates the indefiniteness asserted in the Official Action. Indeed, the use of the plural is necessary to be grammatically correct. However, in a spirit of cooperation, applicants have amended Claim 15 to set forth the word "salt" in the singular. Thus, the recitation of --a pharmaceutically acceptable salt of any of the foregoing compounds-- has replaced the original recitation. Clearly, this amended language evidences the absence of any mixtures. Rather, it clearly indicates that the Markush group includes any of the compounds recited therein as well as any pharmaceutically acceptable salt of any of those compounds.

The last indefiniteness ground of rejection is directed to Claim 26. The indefiniteness of Claim 26 is predicated upon the recitation "for example." Applicants have deleted the phrase "for example AIDS induced dementia." This deletion overcomes this ground of rejection.

The final ground of rejection is directed to Claim 16. Claim 16 has been rejected on alternate grounds. The first of these is formal, a rejection under 35 U.S.C. §112, second paragraph, as being indefinite. The Official Action avers that the treatment of Alzheimer's disease does not recite any steps. The Official Action states that a claim is indefinite where it merely recites a use without any active, positive steps delaminating how to this use is actually practiced.

The second ground of rejection of Claim 16 is substantive. Claim 16 stands rejected, under 35 USC §101, as being directed to non-patentable subject matter.

Applicants are perplexed at both of these grounds of rejection. Claim 16 is directed to a pharmaceutical composition. It is not directed to a method of use. The composition of

Claim 16 comprises a compound within the scope of Claim 1 and a pharmaceutically acceptable carrier therefor.

Admittedly, it is also limited by the requirement that the amount of the active compound is an amount effective in treating the recited diseases mentioned in the preamble portion of Claim 16. That amount is an amount that those skilled in the art, e.g., a medical doctor, would appreciate. The skilled artesian's knowledge of the diseases set forth in Claim 16 and their alleviation by treatment with GSK-3 inhibitors make further recitation unnecessary. That concentration ranges for these treatments are provided in the specification of the present application merely emphasize the definitiveness of this claim.

It is well established that claims need only "reasonably appraise those skilled in the art" as to their scope and be "as precise as the subject matter permits." Hybritech Inc. v. Monoclonal Antibodies, Inc., 802 F2d 1367, 231 USPQ 81 (Fed. Cir. 1986), cert. denied, 480 U.S. 947 (1987).

The above amendment and remarks establish the patentable nature of all the claims examined in the merits in this application. Notice of Allowance and passage to issue of these claims, Claims 1, 2, 4-16, 25 and 26, is therefore respectfully solicited.

Respectfully submitted,

Marvin Bressler
Registration No. 25,132
Attorney for Applicants

Scully, Scott, Murphy & Presser
400 Garden City Plaza
Garden City, New York 11530
516-742-4343
MB:ml